

# CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

WALTER M. DICKIE, M.D., Director

## Weekly Bulletin

### STATE BOARD OF PUBLIC HEALTH

HOWARD MORROW, M.D., San Francisco, President

EDWARD M. PALLETTE, M.D., Los Angeles, Vice President

GEO. H. KRESS, M.D., Los Angeles

GUSTAVE WILSON, M.D., Sacramento

WM. R. P. CLARK, M.D., San Francisco

ROY A. TERRY, M.D., Long Beach

WALTER M. DICKIE, M.D., Sacramento

Executive Officer

#### SAN FRANCISCO

State Office Building, McAllister and  
Larkin Streets UNDERHILL 8700

#### SACRAMENTO

State Office Building, 10th and L Streets  
Capital 2800

#### LOS ANGELES

State Office Building, 217 West First  
Street MADISON 1271

Entered as second-class matter February 21, 1922, at the post office at Sacramento, California, under the Act of August 24, 1912.  
Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917.

Vol. XVI, No. 47

December 18, 1937

GUY P. JONES  
EDITOR

## *Observations on the Epidemiology of Food Infections\**

By F. D. SWEGER, Los Angeles City Health Department

Outbreaks of illness in which the sufferer believes he has become affected or poisoned by some food which he ate are becoming more common than is generally known, not that all such cases are actually due to food infection, but that the patient or a member of his family believes so, is sufficient reason for calling it food poisoning. Reports of such cases have been on the increase during the past few years, and we conclude that the public is becoming food poisoning conscious. This situation is not without its merits, as it gives the health official information about illnesses that would otherwise have been missed, and it also brings to attention the methods and conditions in many food establishments that may need correction to prevent further possible damage.

Owing to the awakening public consciousness to food infection, and the fact that the law provides redress for an injured party, food purveyors are seeking insurance against settlement claims, or court judgments that may be awarded the plaintiffs. Insurance companies do not like to pay for losses that can be prevented, and when losses are high, insurance rates go up, so either way it appears that the incidence of true food poisoning outbreaks is due for a decline now that the insurance adjuster has joined forces with the health official to reduce the cause of preventable cases.

It is not beyond a possibility that the legal and economical aspects of this problem may be the means of providing additional support for further research work that may modify the present regulations that many bakers and restaurateurs consider burdensome

in the preparation and handling of cream filled products.

The subject of food infections is a very diverse and complicated one, it is as *old* as the human race, yet *new* with the discovery of heretofore unknown though oftentimes suspected organisms or toxins. No food detective or epidemiologist has solved 100% of the problems that confronted him. There are no detailed rules to fit all outbreaks. Each case or outbreak has individual angles as diverse as the personalities of different people. However as facts become known and experiences are classified a certain general method of procedure has been developed. An extensive literature has been contributed which may and should be used as a guide or text book by even the most experienced investigator.

The results of investigations and research work conducted by Dr. Geiger and Dr. Karl Meyer are classical. Savage in England has given much study to the subject and has framed some very definite conclusions. In this country Jordan and Tanner have taken a prominent lead in the study of food infections. Tanner's book on "Food Infections and Food Intoxicants" is a valuable reference book on the subject.

In the investigation of a reported or suspected food poisoning outbreak the investigator must be familiar with the general subject, have some knowledge of toxicology, bacteriology, chemistry, and inspection procedure, as well as an interest in, and an adaptability for the work.

For practical purposes food poisoning cases or outbreaks may be considered under four (4) different classes, namely, those due to (1) Natural poisons, as poisonous mushrooms, mussels, during certain seasons

\* Read before Health Officers' Section, League of California Municipalities, San Jose, September 10, 1937.



of the year, bitter almonds, jimson weed or any other of the many poisonous plants that may be part of the food eaten, as in spinach for instance. (2) Chemical poisons, as (a) spray residue on fruit and vegetables, (b) preservatives and adulterants, and (c) accidental circumstances, (3) bacterial infections and toxins, as the presence of pathogenic bacteria, or toxin forming bacteria in the food. This class of food poisoning is responsible for the great majority of outbreaks with the greatest number of cases, and while a great deal is known relative to the etiological agents, yet we are still groping in the darkness with many of these outbreaks and (4) allergic reactions, or sensitization to certain foods. This class is one of personal idiosyncrasy on the part of the patient rather than any quality of the food. It gives us a spectacular demonstration of the adage that "what is one man's meat is oftentimes another man's poison."

There is also another class known as Animal Parasites, as trichina, tape worm, et al, that occasionally requires investigation, especially in localities where pork is not inspected or properly processed. In this connection there is a recent case on record where two women were infected with trichinosis (one of whom died), from eating fresh ground round steak without cooking it. The solution of the case seemed hopeless until one of them recollected that the butcher was engaged in grinding pork for sausage, and interrupted the process to grind the round steak without first cleaning the grinder.

Recognition of an illness as food poisoning is usually determined by a sudden onset accompanied with nausea and abdominal pain or distress, vomiting, diarrhea, headache, weakness, and sometimes fever. The attack may be mild in some cases, and in others it may be very severe with shock and prostration.

The incubation period, or the interval between eating the incriminating food and the onset of the symptoms is usually short, ranging from 1½ or 2 hours to 6 or 8 hours, except that longer periods are experienced for certain types of infection as typhoid, paratyphoid and undulant fevers.

Whenever possible to secure samples of the suspected food, or the food container, or specimens of vomitus or stool from the patient in the acute stage, the tentative determination or diagnosis should be confirmed by laboratory examination, either bacteriological or chemical, or both if indicated.

The persons assigned to food poisoning investigation detail must be on call duty 24 hours of the day, as time is an important element in securing true samples. Even a fraction of a minute's delay sometimes means that the garbage can and not the inspector gets the tell-tale evidence. Also a delay in contacting the patient or attendant in single case outbreaks usually results in failure to secure desired specimens of vomitus or stools while the patient is in the acute stage.

The adoption and use of a blank chart form is of great assistance in facilitating the collection and analysis of data in connection with food poisoning outbreaks. The blank form may be printed on both sides so as to provide a complete case history and menu chart. The history should include the name, age, sex, race, occupation and address of the patient, the symptoms, the name of the attending physician and

the time and place of treatment, the diagnosis, tentative or final, the source of suspected food, number and kind of laboratory samples, time and place of collection, laboratory findings, and other pertinent information. The menu chart on the reverse side should be arranged so all articles of food may be listed in a horizontal column at the top and the names of all persons partaking of the food in a vertical column at the left. Following the name of each person, space should be provided to indicate whether the person was affected or not, and also the time or hour of eating and the time of onset of symptoms. Also on a line opposite each name an X should be marked to indicate each article of food eaten. An analysis of this chart, if carefully prepared, will usually indicate suspected food which should be investigated and sampled.

A case history-menu chart form of this kind has been used by the Los Angeles City Health Department for several years. Each record when completed is numbered and filed for future reference. A current index for ready reference is prepared of all outbreaks and cases showing the case number, the date of the outbreak, the names and addresses of all patients, the place where the food was purchased or eaten and also the laboratory findings.

The number of suspected outbreaks reported and investigated since 1935 are as follows:

Year	Outbreaks	Cases	Laboratory Findings			No. Samples
			Pos.	Neg.	Doubtful	
1935	209	592	8	87	5	109
1936	467	1107	53	208	7	199
1937 (9/1)	428	1103	55	180	29*	(pending) 164

Contrary to the common belief that food poisoning outbreaks are largely limited to the hot months of the year, we find that there is no appreciable difference, with the exception that there are more cases due to staphylococci infection in hot weather than in the cooler months.

For the first eight months of this year the number of suspected outbreaks and cases investigated were as follows:

Month	Outbreaks	Cases	Month	Outbreaks	Cases
January	33	50	May	62	231
February	35	90	June	73	160
March	77	129	July	44	183
April	42	84	August	62	176

Analyzing these figures we find that laboratory samples were obtained in 64% of the outbreaks investigated, and that laboratory examination showed 10% were positive and 42% were negative for food poisoning organisms. This does not include 36% of the outbreaks investigated in which samples were not obtainable, and in which conclusions had to be based largely upon clinical and epidemiological evidence alone. The ratio however, we believe to be about the same as for the outbreaks in which samples were obtainable.

Judging the evidence thus presented there appears to be too great a discrepancy in the results and that either the investigations were not thorough or the laboratory examination was not complete. The explanation however, is obvious when we take into consideration the fact that a great number of the obscure



outbreaks were not due to any food consumed, but to the malady known as "Gastro-intestinal epidemic", many of these cases were traced directly to contacts about 48 hours previous with some patient ill with the same or similar symptoms. In some instances these contact cases were traced back through three or four successive cases.

Many other obscure or negative cases were found upon being hospitalized later, to be due to dietary indiscretions, peptic ulcers, and disorders of the digestive tract as well as other ailments of various kinds.

Occasionally the investigator will find that a case diagnosed as food poisoning due to eating a certain kind, or unknown kind of food was not due to the food at all, but to a totally different cause, for example this case. A morning paper carried a news item on the front page with pictures of three patients in hospital beds and stating that they had been poisoned by eating a dinner of "canned chicken soup and cottage cheese." The husband and father of the patients who was also slightly affected, was found at home and gave a full history of the case. He also was sure the "canned chicken soup" had made them sick, but he never suspected the hot lemonade made in a grey enamel vessel.

The investigator suspected antimony poisoning and took the vessel along to the laboratory together with samples of the food. Laboratory examination proved the food to be harmless, but confirmed the presence of antimony in considerable quantities. Subsequently several other outbreaks involving antimony poisoning were conclusively demonstrated. One of these outbreaks occurred on the 24th of last month and was due to eating stewed fresh apricots prepared and kept over night in a gray enamel stew kettle.

It is suggestive that some warning is due the public in the use of gray enamel ware for preparing acid foods, and that manufacturing regulations prohibit the use of antimony in the glazing of such kitchen utensils.

During the winter months there have been many cases of obscure or negative origin reported as suspected food poisoning that upon extended investigation were proved to be due to carbon monoxide poisoning instead of suspected food. Such cases required considerable investigation sometimes to fix the true responsibility.

Sometimes there are cases of an unusual nature investigated that present startling and amusing sequence. There is the case of a Mr. and Mrs. X and their guests who partook of a boiled cabbage dinner, the cabbage having been cooked in an iron pot. There were cocktails before dinner, black coffee and more liquor with and after dinner. Then it was discovered that their tongues had a black coating and they could, figuratively speaking, spit ink. Result: panicky that they were poisoned, all rushed to the Receiving Hospital for treatment. The Investigator answered a hurried call and after getting the history and consulting with the doctor the patients were informed that they would recover as it was only the reaction of iron oxide and tannic acid.

Then there is another spectacular case in the records that occurred quite recently. It is that of a patient, who thought she was being poisoned by baked

ham. She became quite alarmed when she accidentally discovered that the ham including the bone, had a distinct phosphorescent or luminous glow when viewed in the dark. "Glowing ham" was indeed a new experience, it excited much interest and cast some more light on the subject of food poisoning investigation.

## INSTRUCTIONS RELATIVE TO THE USE OF THE PENALTY PRIVILEGE

The United States Public Health Service has provided the following instructions, as based upon the regulations of the Postoffice Department, in the use of the penalty privilege by health officers:

1. The use of the penalty privilege by state health officers, state epidemiologists, state venereal disease control officers, state directors of county health work and state sanitary engineers, when appointed in the Public Health Service, will be permitted, for the following purposes:

(a) The collection of reports of notifiable diseases, where such reports are in turn to be made available to the Public Health Service. This would include return penalty cards and envelopes to be used by private physicians, when such cards and envelopes are stamped or printed with the return address in accordance with the postal regulations.

(b) The querying of morbidity reports for additional data where necessary, including use of the penalty privilege for return reply.

(c) The forwarding of reports of notifiable diseases from the State Health Department to the Public Health Service.

(d) The interstate notification of communicable diseases where the regular Public Health Service form is to be used.

(e) The forwarding of narrative, statistical, financial and other reports required by the Public Health Service in connection with the operation of the Social Security program and with the certification of water supplies used by interstate carriers.

(f) The dissemination of information issued by the Public Health Service and bearing its imprint, relating to the cause, treatment and prevention of diseases.

(g) Transmission of correspondence, pay rolls, expense accounts and reports required in the conduct of the Work Progress Administration Community Sanitation, Malaria Control and Mine Sealing programs, and in the certification of water supplies used by interstate carriers.

(h) Gathering of information in connection with special investigations or studies, authorized or approved and supervised by the Public Health Service, the results of which are to be submitted to the service.

2. The use of the penalty privilege by county or city health officers, when appointed in the Public Health Service, will be permitted for the following purposes only:

(a) The collection of reports of notifiable diseases, where such reports are in turn to be made available to the Public Health Service.

(b) The querying of morbidity reports for additional data where necessary, including use of the penalty privilege for return reply.

(c) The forwarding of reports of notifiable diseases from the city or county health department to the state health department, where such reports are in turn to be made available to the Public Health Service.

(d) The forwarding of narrative, statistical, financial and other reports to the state health department, where such reports are to form the basis of reports required of the state health departments by the Public Health Service in connection with the operation of the Social Security program.

(e) The dissemination of information issued by the Public Health Service and bearing its imprint, relating to the cause, treatment and prevention of diseases.

(f) Gathering of information in connection with special investigations or studies, authorized or approved and supervised by the Public Health Service, the results of which are to be submitted to the service.



3. The use of the penalty privilege for the forwarding of laboratory specimens, specimen containers, reports on laboratory examinations, state and local health department literature, circulars and correspondence other than that previously described in these instructions is a violation of the postal laws and regulations which may subject the offender to the penalty.

4. The printing of penalty cards, envelopes, mailing slips and Public Health Service letter heads by state or local health departments is prohibited by federal law.

5. In all cases not clearly authorized in the foregoing, where there is doubt as to the legality of present or contemplated use of the penalty mailing privilege, the matter should be referred to the Public Health Service in Washington for determination.

### MORBIDITY

#### Complete Reports for Following Diseases for Week Ending December 11, 1937

##### Chickenpox

475 cases: Alameda County 7, Alameda 10, Berkeley 6, Oakland 46, Butte County 10, Calaveras County 1, Fresno County 6, Humboldt County 4, Kern County 3, Lemoore 3, Lassen County 2, Los Angeles County 23, Beverly Hills 2, Glendale 10, Inglewood 1, Los Angeles 29, Monrovia 1, Pasadena 5, Pomona 1, South Pasadena 3, Whittier 4, Lynwood 1, Maywood 1, Madera County 9, Merced County 2, Gustine 10, Monterey County 2, Orange County 6, Orange 2, Santa Ana 3, Tustin 1, Roseville 5, Riverside County 21, Corona 1, Hemet 12, Perris 1, Riverside 11, Sacramento 1, San Bernardino County 5, Redlands 4, San Diego County 12, Escondido 5, National City 5, San Diego 18, San Francisco 28, San Joaquin County 6, Lodi 3, Manteca 12, San Luis Obispo County 3, San Mateo County 1, Santa Barbara County 4, Santa Barbara 1, Santa Maria 4, Santa Clara County 3, Los Gatos 16, Santa Clara 1, Sunnyvale 4, Santa Cruz 11, Watsonville 3, Siskiyou County 1, Stanislaus County 7, Modesto 4, Exeter 2, Ventura County 20, Fillmore 1, Oxnard 8, Santa Paula 2, Ventura 3, Yolo County 3, Woodland 4, Marysville 3, Fresno 2.

##### Diphtheria

21 cases: Oakland 3, Fresno 1, Humboldt County 1, Kern County 1, Los Angeles County 4, Los Angeles 6, Madera County 1, Riverside County 1, Gilroy 1, Palo Alto 1, Ventura 1.

##### German Measles

11 cases: Fresno County 1, Inyo County 1, Los Angeles County 1, Glendale 1, Long Beach 1, Los Angeles 3, Pasadena 2, Yolo County 1.

##### Influenza

53 cases: Fresno County 2, Inyo County 1, Los Angeles County 1, Alhambra 1, Inglewood 1, Los Angeles 17, Merced 1, Monterey County 1, Orange County 1, Anaheim 2, Santa Ana 1, Sacramento 13, San Bernardino County 2, San Diego County 1, San Diego 1, San Francisco 6, Ventura 1.

##### Malaria

One case: Stanislaus County.

##### Measles

28 cases: Alameda 2, Oakland 1, Fresno County 1, Kern County 1, Los Angeles County 4, Compton 2, Glendale 1, Los Angeles 6, Merced County 2, Los Banos 5, San Diego 1, San Francisco 1, Tulare 1.

##### Mumps

292 cases: Alameda County 3, Alameda 1, Berkeley 3, Oakland 32, San Leandro 1, Contra Costa County 1, Fresno County 1, Fresno 1, Kern County 1, Tehachapi 2, Los Angeles County 11, Compton 2, Glendale 7, Long Beach 10, Los Angeles 21, Pomona 1, Santa Monica 5, Hawthorne 2, South Gate 4, Maywood 1, Madera County 10, Madera 3, Chowchilla 2, Salinas 1, Napa County 2, Orange County 10, Anaheim 12, Orange 1, Santa Ana 1, Roseville 4, Sacramento County 12, Sacramento 5, San Bernardino County 1, Ontario 1, Redlands 1, San Diego County 6, San Diego 34, San Francisco 35, San Joaquin County 1, San Luis Obispo County 2, San Mateo County 1, Lompoc 5, Santa Maria 2, Palo Alto 1, Stanislaus County 24, Turlock 3, Sutter County 1, Ventura County 1.

##### Pneumonia (Lobar)

64 cases: Alameda County 1, Oakland 2, Fresno County 7, Kern County 3, Bakersfield 1, Los Angeles County 4, El Monte 1, Long Beach 1, Los Angeles 30, Riverside County 3, Riverside 2, Sacramento 2, San Diego 2, San Francisco 4, Santa Barbara 1.

##### Scarlet Fever

240 cases: Alameda County 1, Berkeley 2, Oakland 14, Butte County 7, Contra Costa County 1, Fresno County 7, Fresno 2, Kingsburg 1, Glenn County 2, Inyo County 1, Kern County 4, Bakersfield 1, Delano 1, Lassen County 22, Los Angeles County 28, Alhambra 3, Compton 1, Glendale 5, Glendora 1, Hermosa 2,

Huntington Park 1, La Verne 1, Long Beach 9, Los Angeles 33, Montebello 1, Pasadena 1, San Fernando 1, Santa Monica 1, Sierra Madre 1, Whittier 1, Madera County 4, Madera 6, Chowchilla 2, Merced 3, King City 1, Grass Valley 1, Orange County 2, Anaheim 1, Santa Ana 2, Corona 1, La Mesa 1, Perris 1, Riverside 2, Sacramento County 2, San Bernardino County 3, Ontario 1, San Bernardino 3, San Diego 3, San Francisco 12, San Joaquin County 2, Lodi 1, Stockton 2, San Mateo County 1, San Mateo 1, San Carlos 2, Santa Barbara County 2, Santa Clara County 4, Palo Alto 2, Mount Shasta City 3, Healdsburg 1, Stanislaus County 4, Turlock 1, Fillmore 1, Santa Paula 1, Ojai 3, Yuba County 1, Sacramento 1.

##### Smallpox

13 cases: Oakland 1, Lemoore 11, Sonora 1.

##### Typhoid Fever

9 cases: Colusa County 1, Los Angeles 2, Torrance 1, Shasta County 2, Yuba City 1, California 2.\*

##### Whooping Cough

393 cases: Berkeley 3, Oakland 19, San Leandro 1, Pittsburg 3, Fresno County 4, Humboldt County 25, Kern County 5, Los Angeles County 28, Alhambra 3, El Monte 1, Glendale 1, Huntington Park 1, Long Beach 10, Los Angeles 50, Monrovia 12, Pasadena 3, Santa Monica 7, Whittier 4, Lynwood 1, Hawthorne 2, Los Banos 1, Merced 2, Orange County 1, Fullerton 1, Santa Ana 3, Seal Beach 2, Riverside County 4, Sacramento 36, San Bernardino 1, San Diego County 4, El Cajon 1, Escondido 8, National City 9, San Diego 16, San Francisco 75, San Joaquin County 9, Manteca 4, Stockton 4, Paso Robles 3, San Luis Obispo 1, Burlingame 1, Santa Barbara County 2, Santa Clara County 1, Santa Cruz County 8, Suisun 2, Stanislaus County 5, Turlock 2, Ventura County 1, Ventura 3.

##### Meningitis (Epidemic)

3 cases: Fresno 1, Los Angeles 2.

##### Dysentery (Amoebic)

5 cases: Los Angeles 1, Monrovia 1, San Bernardino County 2, California 1.\*

##### Dysentery (Bacillary)

11 cases: Los Angeles 9, San Diego 1, Tuolumne County 1.

##### Ophthalmia Neonatorum

3 cases: Los Angeles.

##### Pellagra

3 cases: Glendale 1, Redondo 1, Santa Monica 1.

##### Poliomyelitis

2 cases: Glenn County 1, San Diego 1.

##### Tetanus

One case: Kern County

##### Trachoma

2 cases: Riverside County 1, San Francisco 1.

##### Trichinosis

One case: San Francisco.

##### Jaundice (Epidemic)

9 cases: El Dorado County 5, Placerville 1, Oakdale 3.

##### Food Poisoning

17 cases: Los Angeles 16, San Diego County 1.

##### Undulant Fever

6 cases: Los Angeles County 1, Los Angeles 1, Pomona 1, San Bernardino County 1, San Bernardino 1, Visalia 1.

##### Septic Sore Throat

One case: Orange.

##### Rabies (Animal)

44 cases: Hanford 1, Los Angeles County 6, Compton 1, Glendale 1, Glendora 1, Huntington Park 1, Los Angeles 22, Pasadena 2, Pomona 1, Santa Monica 1, Merced 1, Salinas 1, Orange County 1, La Habra 1, Redlands 1, Stanislaus County 1, Sonora 1.

\* Cases charged to "California" represent patients ill before entering the state or those who contracted their illness traveling about the state throughout the incubation period of the disease. These cases are not chargeable to any one locality.

U C MEDICAL SCHOOL  
LIBRARY  
PARNASSUS & THIRD AVES  
SAN FRANCISCO CALIF